SECTION 1
Joining the Rear and Forward Sections
Ref Dwg 8FC-2

The windows in the rear fuselage side skins are cut-out later after the controls are installed.

SUGGESTION:
Build the support structure and saw horses Ref drawing 8FC-2

Photo to show the Cabin Side Longerons (3/4” X 3/4” X .093”) solid riveted as part of the cabin side assembly.

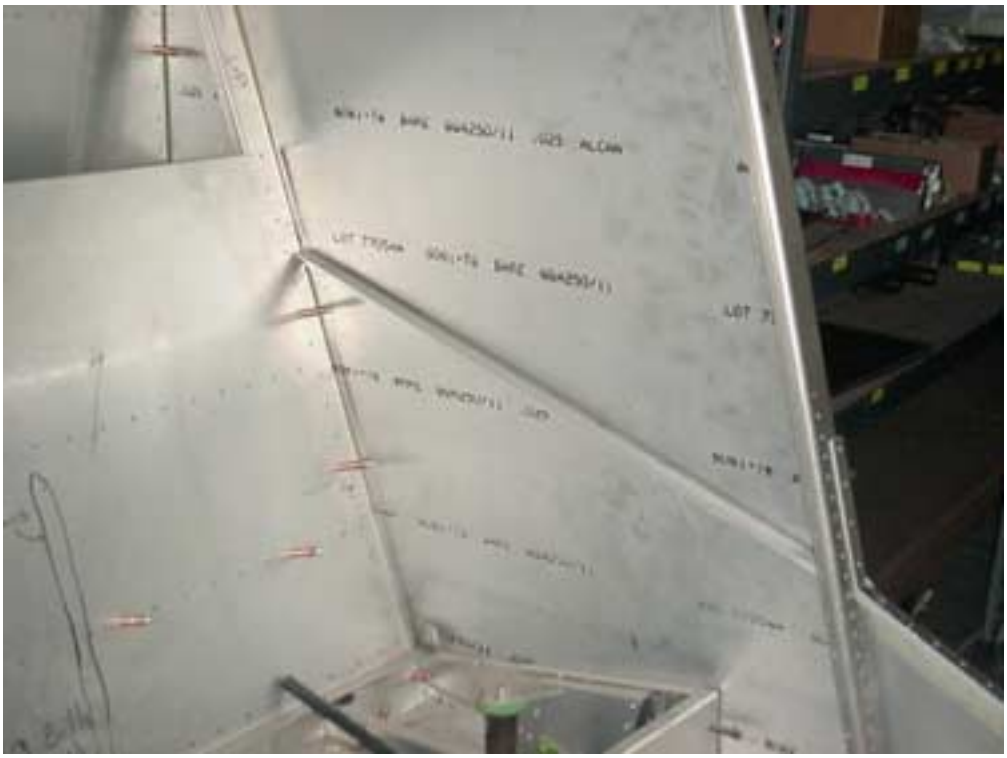


Photo showing how the Cabin Side Longeron joins up with the rear fuselage

Before joining the two sections together, check the length of the Cabin Side Longerons, some trimming may be required.

Allow approximately 2 to 5mm clearance between the end of the Longeron and the seat back.

The aft end of the Longeron will be approximately 115mm down from the top of the Rear Seat Back 8F10-11

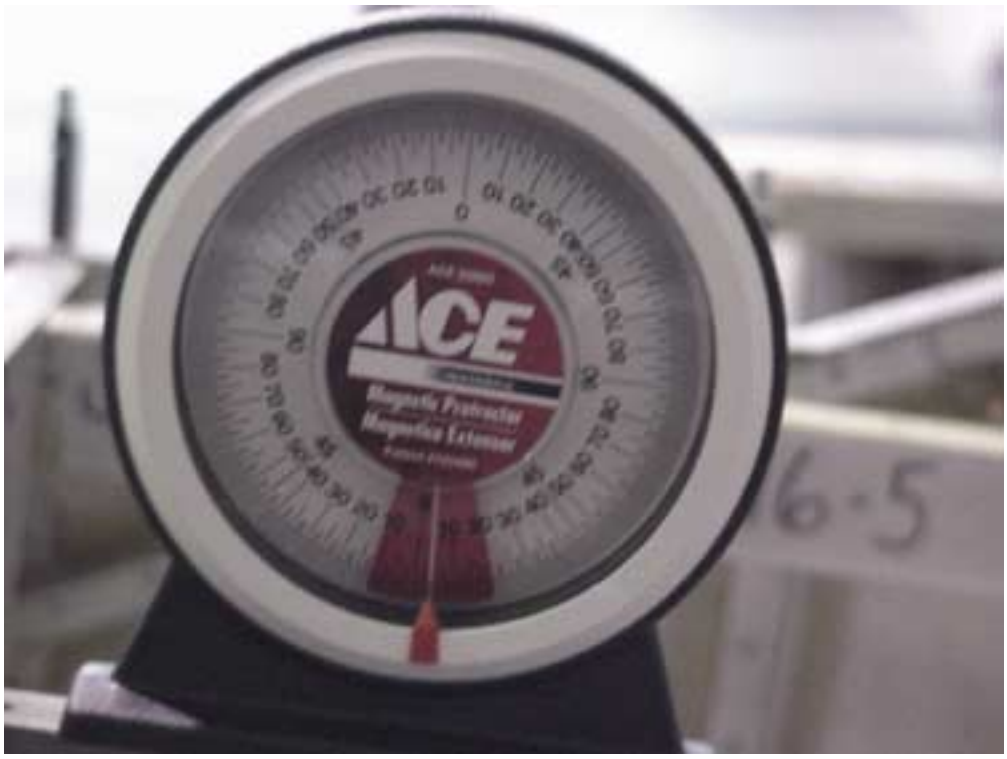
If necessary trim (with a hack saw) the aft end of the cabin side longerons before joining the rear fuselage to the forward fuselage section.

Length approximately 750mm

Measure the height of the Longeron on the cabin side to layout the height of the Longeron along the front edge of the fuselage side skin: Up approximately 410mm.

Line E-E is along the aft edge of the corner angle inside the cabin side assembly.

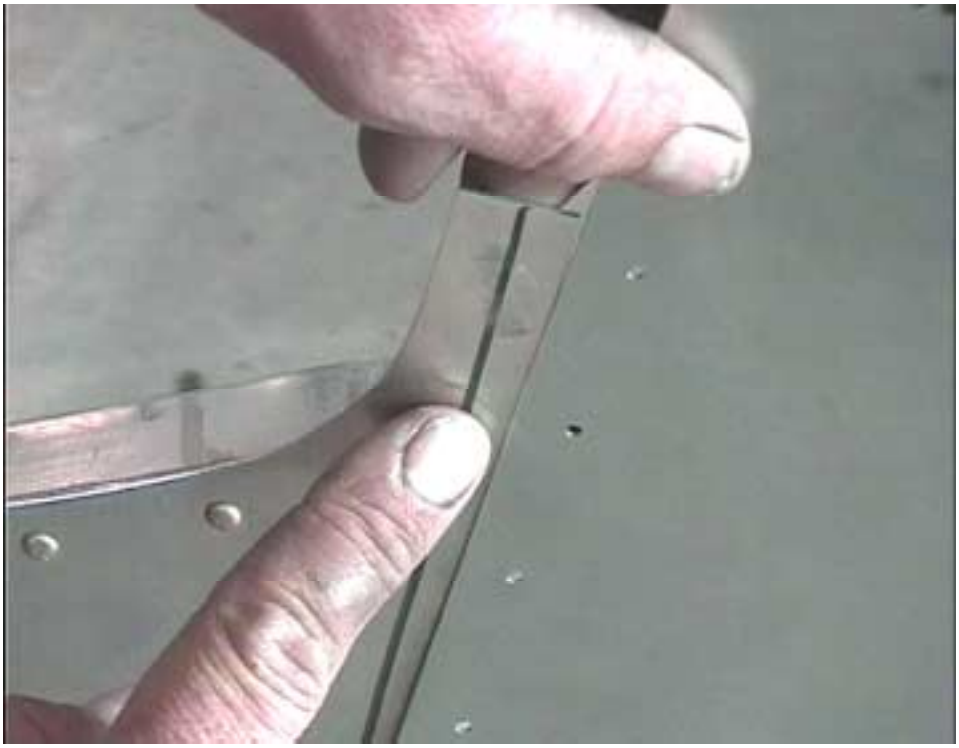
Position the forward fuselage section on the saw horses, Ref drawing 8FC-2
SUGGESTION:
Strap down the assembly to keep it from moving falling off!



CHECK:
The cabin floor is at 4 degrees from level

Angle protractor, or digital protractor on the cabin floor (check various places such as along the seat and the cabin sides).

Draw a reference line along the rear edge of the cabin side 10mm from the edge.



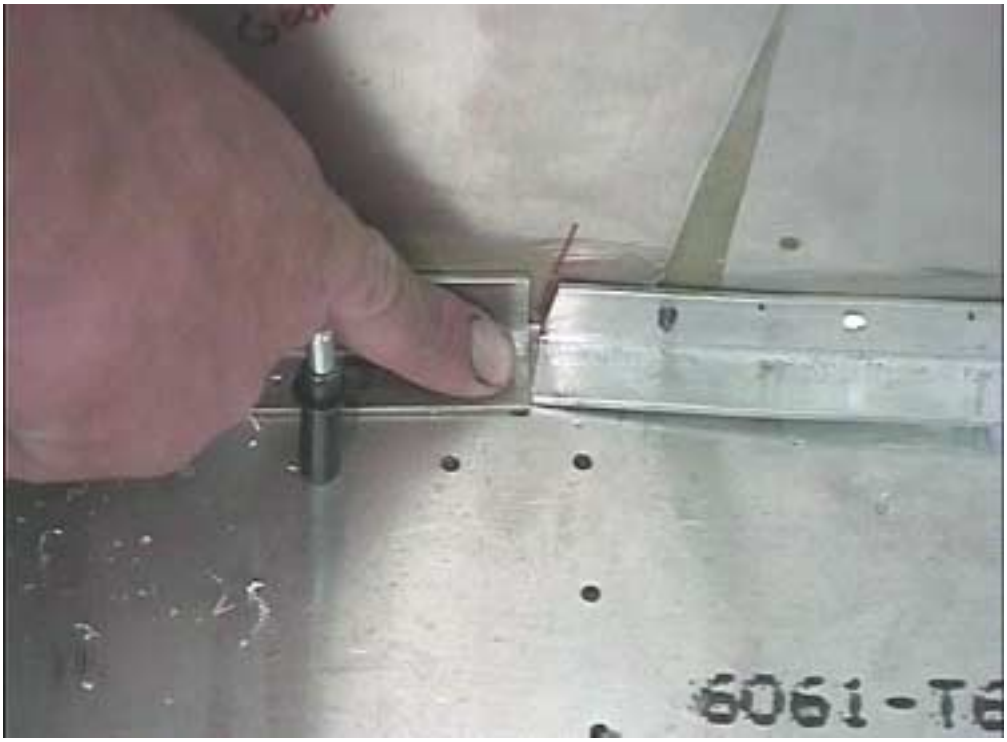
The front edge of the rear fuselage side skins is supplied pre-drilled with pilot holes along the overlap with the cabin sides.

For drilling purposes, the cabin sides will be positioned on the inside of the fuselage side skins. The line is a reference line to check for edge distance before back drilling.

Inside view of how the forward and rear fuselage section join together.

The front end of the Bottom Rear Longerons 8F3-1A will come up to the end of the corner angle solid riveted to the cabin side assembly.

Remove the Side Channel 8F5-4 from the rear fuselage assembly; it will be re-installed after the side flange is trimmed to make room for the cabin side Longeron.



Detail of the Bottom Rear Longeron 8F3-1A with the aft end of the corner angle of the Cabin side assembly.

Before joining rear fuselage, file the I/B corner of the Longeron 8F3-1A; take off approximately 3mm from the I/B corner of the bottom flange. File the bottom flange approximately parallel with the end of the corner angle.

Join the rear fuselage section to the forward section:

The cabin floor skin 8F8-7 slips underneath the bottom skin 8F2-3A

Use the support brace shown on drawing 8FC-2 to support the aft end of the fuselage.

Line up the front bottom corner of the rear fuselage with reference line E-E

Level reference line M-C, check the angle along the front edge of the skin is at 74 degrees. Ref Drawing 8FC-2

An alternative method is to trace along the top and bottom of the cabin side Longeron to mark the fuselage side skin. Take the two sections apart, Cleco the Side Channel along the front edge of the side skin; transfer the lines to the O/B flange of the side channel. Remove the side channel to cut the notch.

Layout the location of the Cabin side Longeron on the side Channel 8F5-4

Measure down from the top skin to the Longeron; also check from the top of the Longeron to the first hole (check with the corresponding hole drilled in the side flange of the Channel).
Cut a notch in the O/B side of the Side channel.

Ref Drawing 8FR-4

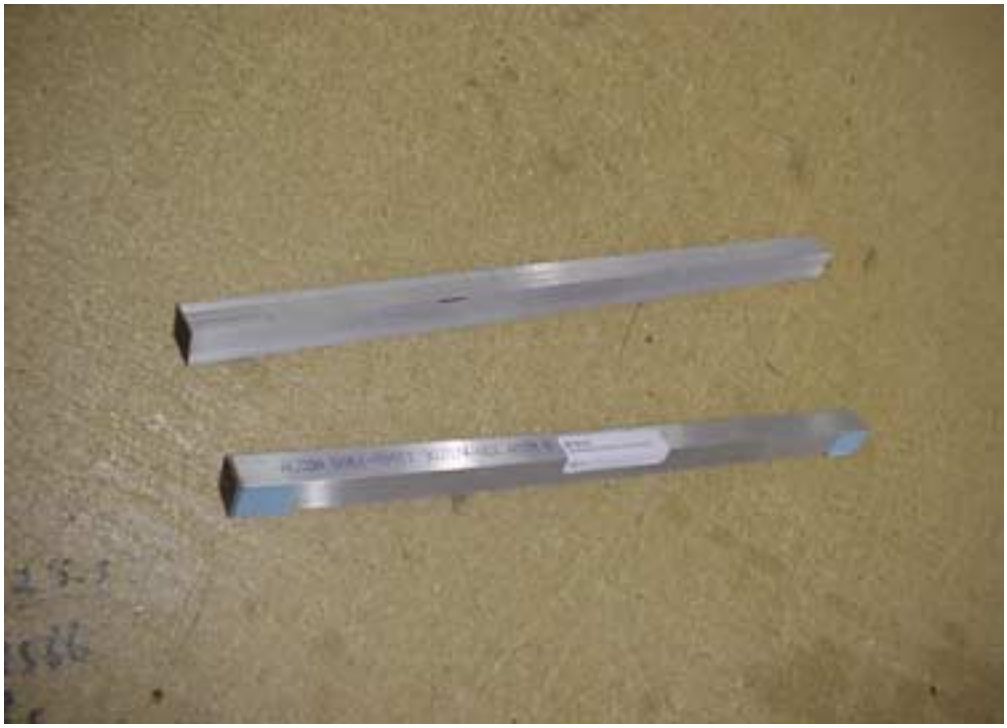
Photo of the right Side Channel 8F5-4

Layout on the front side of the channel

Layout of the O/B flange.

The O/B flange is cut to make room for the Longeron.

Photo of the left Side Channel 8F5-4



EXTENSION DOUBLER
8F16-13

3/4x3/4x.093”

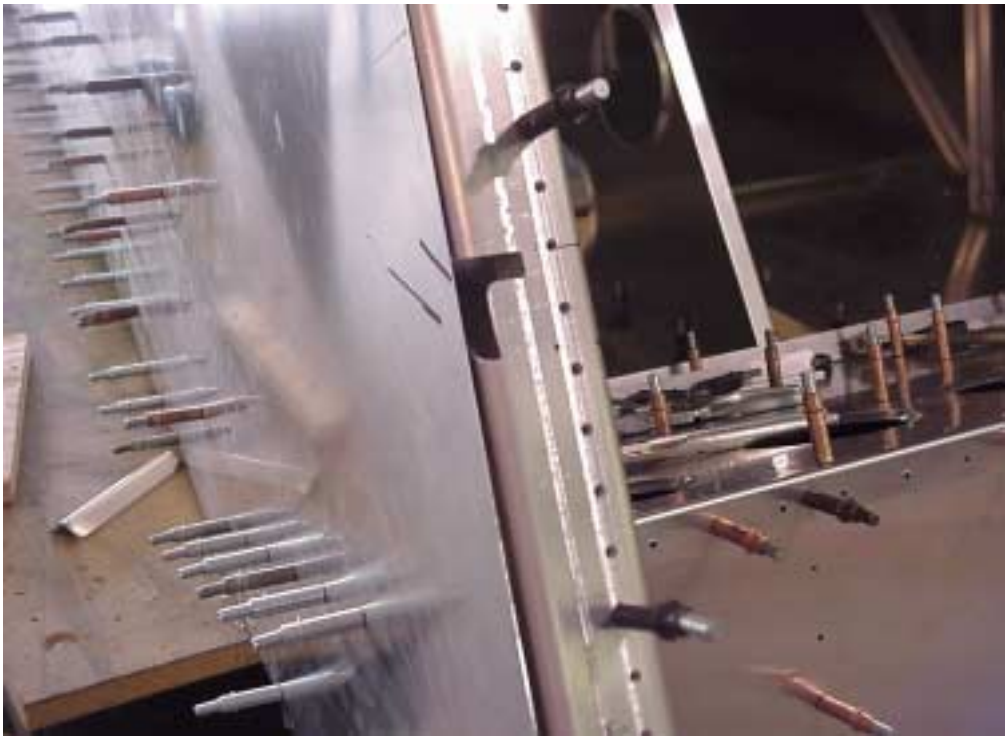
Length = 400mm

20 RIVETS A5
(Approximately pitch 20)

Layout the rivet line 9.5mm from the edge. Pre-drill with #40 pilot holes.

The extruded ‘L’, part 8F16-13 is installed on the rear surface of 8F5-4. It is located with one flange facing across the aircraft, pointing inboard and the other pointing aft and close to the cabin side Longeron.

Photo of left side, next photo shows the right side.



Position the cutout in the middle of the Doubler 8F16-13

COMMENT: it is best to Cleco the Side Channel 8F5-4 to the side skins, then to clamp the Double 8F16-13 to the Channel.

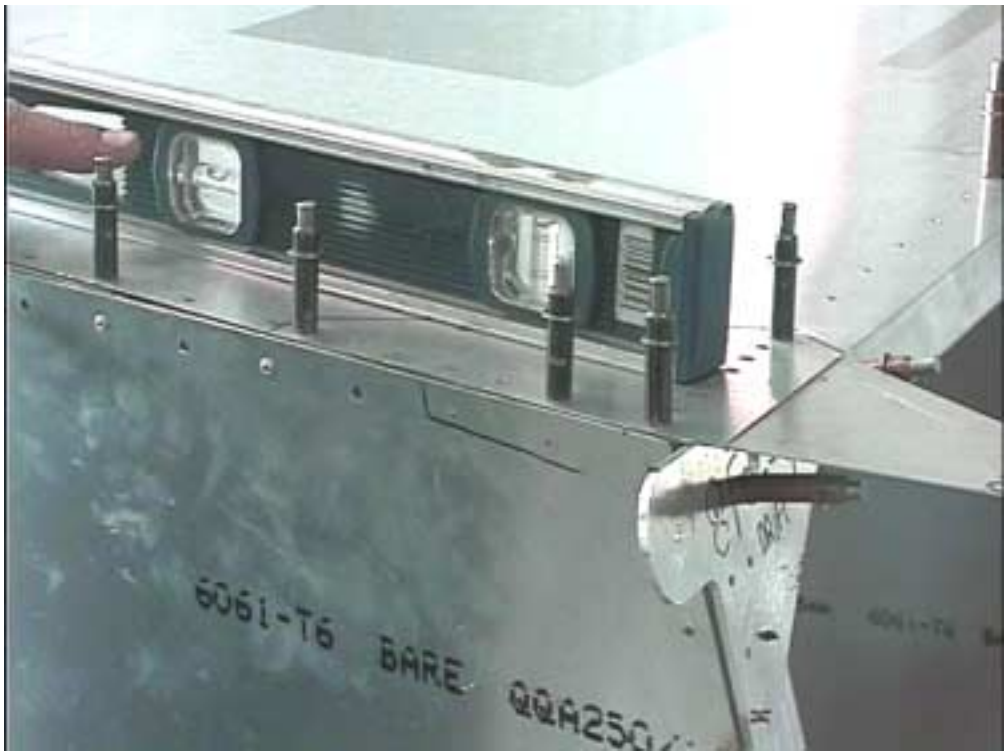
NOTE: Don’t use the edge of the cutout to position the Doubler. The cabin side longerons make a bend, 23mm along the web (front) from the fuselage skin to the Doubler, 19mm measured from the aft edge of the O/B flange of 8F5-4 to the Doubler 8F16-13

The two lines on the side skin represent the cabin side Longeron.
It is not necessary to disconnect the rear fuselage from the forward fuselage to locate the cutout in the Side Channel.

Cleco the Side Channel to the fuselage Side skin.

Before drilling the cabin side assemblies to the rear fuselage check that the rear fuselage is level (with the side channel 8F5-4 Clecos along the front edge of the side skins).

Level the rear fuselage assembly (span wise or width-wise)



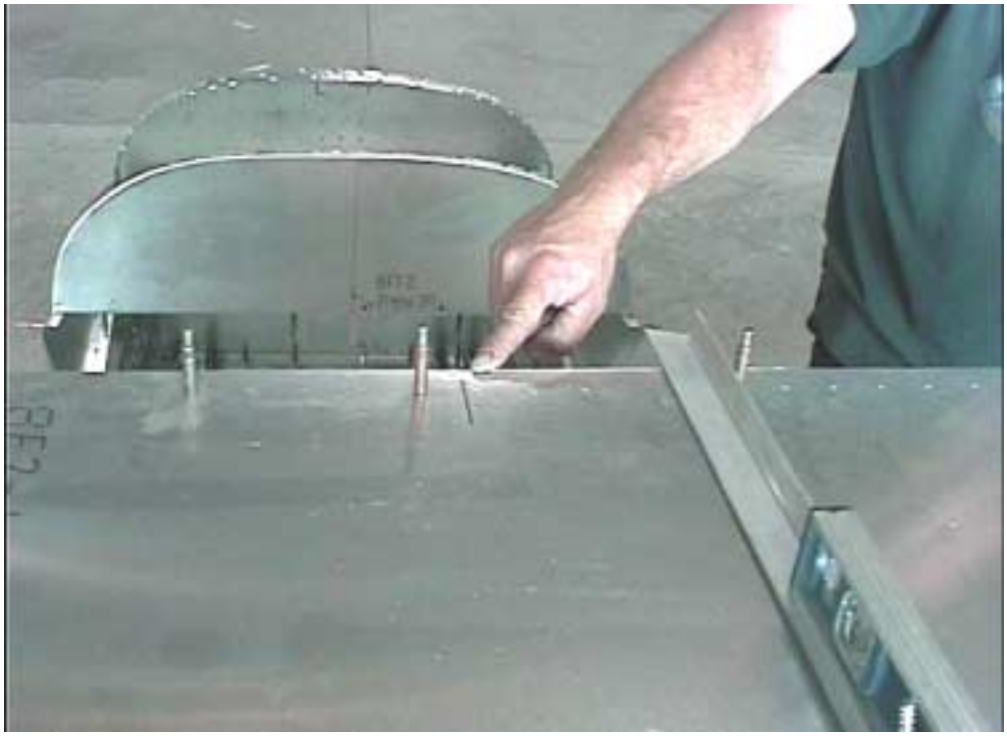
IMPORTANT:
The top edge of the side skin has a curvature. Positioning the level lengthwise along the top edge of the side skin is only suitable for a first estimate!

First level the rear fuselage along the reference line C-D

Position an angle protractor along the Side Channel 8F5-4

Check left and right sides.

74 degrees



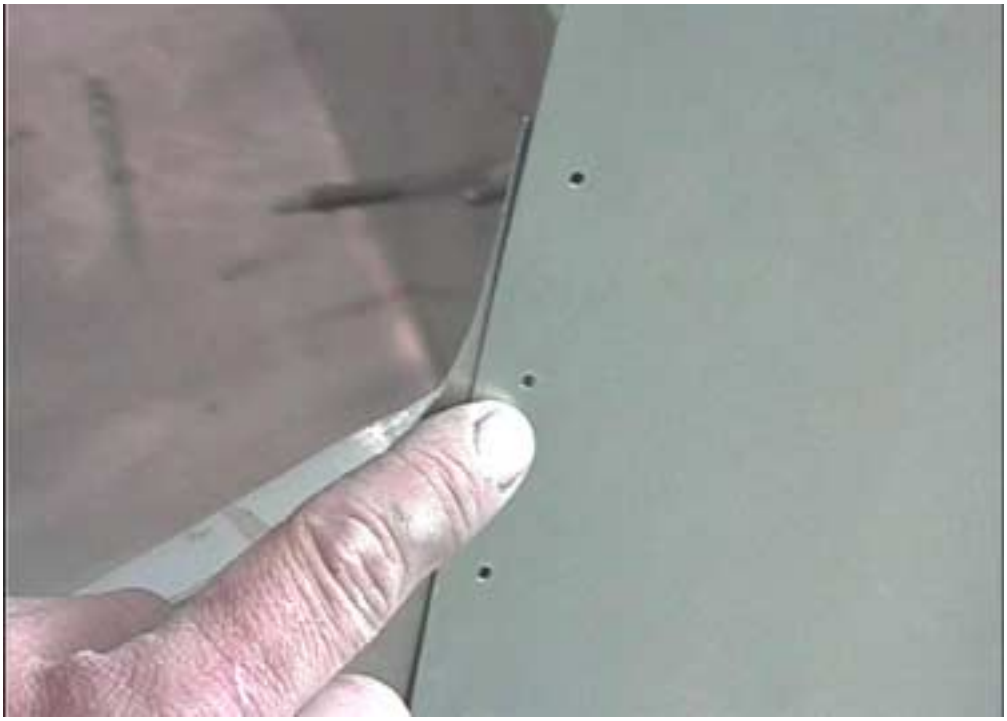
Check that the center line of the cabin floor 8F8-7 is in line with the aircraft center of the rear fuselage:

Tie a string at the back end of the fuselage, such as on the upper rudder hinge plate 8F4-1

Tie the front end of the string to a wall (or step ladder for easier adjustments); adjust the sting to pass over the aircraft centerline as marked on the topside of the fuselage top.

The string is pulled tight along the top skin, over the aircraft center line (At the rear slide a 2" spacer between the string and the top skin to compensate for the curvature sides) the string does not have to be level or parallel.

The firewall is installed in the next section. The purpose of the Plump bob is to check that the front of the cabin floor is in alignment with the aircraft centerline of the rear fuselage.



Check for edge distance before drilling.

Drill and Cleco with either #40 or #30 pilot holes.

A5 PITCH 40

The bottom holes are drilled later when the gear strut fitting is installed.